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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 09/891,850   | 06/26/2001  | Sanjay R. Hegde      | BUR920000206US1     | 2428             |
| 7590 10/12/2005  |             |                      | EXAMINER            |                  |
| McGuireWoods LLP<br>Suite 1800<br>1750 Tysons Boulevard<br>McLean, VA 22102-4215 |             |                      | JEANTY, ROMAIN      |                  |
|  |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 3623                |                  |

DATE MAILED: 10/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/891,850

Applicant(s)

HEGDE ET AL.

Examiner

Romain Jeanty

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This Office Action is in response to communication received June 26, 2001. Claims 1-23 are pending in the application.

#### ***Specification***

2. The disclosure is objected to because of the following informalities: The US Application Serial No. is missing on page 1 line 7 of the specification. Applicant is requested to provide such application No. Appropriate correction is required.

#### **Claim Rejections - 35 USC § 101**

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-23 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

As an initial matter, the United States Constitution under Art. I, §8, cl. 8 gave Congress the power to "promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries". In carrying out this power, Congress authorized under 35 U.S.C. §101 a grant of a patent to "[w]hoever invents or discovers any new and useful process, machine, manufacture, or composition or matter, or any new and useful improvement thereof." Therefore, a fundamental premise is that a patent is a statutorily created vehicle for Congress to confer an exclusive right to the inventors for "inventions" that promote the progress of "science and the useful arts". The

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phrase "technological arts" has been created and used by the courts to offer another view of the term "useful arts". See *In re Musgrave*, 167 USPQ (BNA) 280 (CCPA 1970). Hence, the first test of whether an invention is eligible for a patent is to determine if the invention is within the "technological arts".

Further, despite the express language of §101, several judicially created exceptions have been established to exclude certain subject matter as being patentable subject matter covered by §101. These exceptions include "laws of nature", "natural phenomena", and "abstract ideas". See *Diamond v. Diehr*, 450, U.S. 175, 185, 209 USPQ (BNA) 1, 7 (1981). However, courts have found that even if an invention incorporates abstract ideas, such as mathematical algorithms, the invention may nevertheless be statutory subject matter if the invention as a whole produces a "useful, concrete and tangible result." See *State Street Bank & Trust Co. v. Signature Financial Group, Inc.* 149 F.3d 1368, 1973, 47 USPQ2d (BNA) 1596 (Fed. Cir. 1998).

This "two prong" test was evident when the Court of Customs and Patent Appeals (CCPA) decided an appeal from the Board of Patent Appeals and Interferences (BPAI). See *In re Toma*, 197 USPQ (BNA) 852 (CCPA 1978). In *Toma*, the court held that the recited mathematical algorithm did not render the claim as a whole non-statutory using the Freeman-Walter-Abele test as applied to *Gottschalk v. Benson*, 409 U.S. 63, 175 USPQ (BNA) 673 (1972). Additionally, the court decided separately on the issue of the "technological arts". The court developed a "technological arts" analysis:

The "technological" or "useful" arts inquiry must focus on whether the claimed subject matter...is statutory, not on whether the product of the claimed subject matter...is statutory, not on whether the prior art which the claimed subject matter purports to replace...is statutory, and

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not on whether the claimed subject matter is presently perceived to be an improvement over the prior art, e.g., whether it "enhances" the operation of a machine. *In re Toma* at 857.

In *Toma*, the claimed invention was a computer program for translating a source human language (e.g., Russian) into a target human language (e.g., English). The court found that the claimed computer implemented process was within the "technological art" because the claimed invention was an operation being performed by a computer within a computer.

The decision in *State Street Bank & Trust Co. v. Signature Financial Group, Inc.* never addressed this prong of the test. In *State Street Bank & Trust Co.*, the court found that the "mathematical exception" using the Freeman-Walter-Abele test has little, if any, application to determining the presence of statutory subject matter but rather, statutory subject matter should be based on whether the operation produces a "useful, concrete and tangible result". See *State Street Bank & Trust Co.* at 1374. Furthermore, the court found that there was no "business method exception" since the court decisions that purported to create such exceptions were based on novelty or lack of enablement issues and not on statutory grounds. Therefore, the court held that "[w]hether the patent's claims are too broad to be patentable is not to be judged under §101, but rather under §§102, 103 and 112." See *State Street Bank & Trust Co.* at 1377. Both of these analysis goes towards whether the claimed invention is non-statutory because of the presence of an abstract idea. Indeed, *State Street* abolished the Freeman-Walter-Abele test used in *Toma*. However, *State Street* never addressed the second part of the analysis, i.e., the "technological arts" test established in *Toma* because the invention in *State Street* (i.e., a computerized system for determining the year-end income, expense, and capital gain or loss for the portfolio) was already determined to be within the technological arts under the *Toma* test. This dichotomy has

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been recently acknowledged by the Board of Patent Appeals and Interferences (BPAI) in affirming a §101 rejection finding the claimed invention to be non-statutory. See *Ex parte Bowman*, 61 USPQ2d (BNA) 1669 (BdPatApp&Int 2001).

In the present application, method claims 1, and 11 clearly recite a “useful, concrete and tangible result” (“provides a supply schedule of the material release”), however the claim recites no structural limitations (i.e., computer implementation). None of the steps in the body of the claim indicates any connection to a computer or technology. The step of “dividing..., sorting..., allocating...” could be performed manually by a person without use of technology means.

From this it can be seen that the broadest reasonable equivalent disclosed fails to pass the first prong technological arts test and therefore recites non-statutory subject matter under 35 USC 101.

In addition, claim 18 fails to recite a useful, concrete and tangible result. In particular the preamble of the claim recites a system for optimizing a supply schedule. However, the body of the claim does not recite of any optimizing step. Therefore, the claim is non-statutory for failing to recite a useful, concrete and tangible result. Applicant is suggested to amend the claim to recite an optimizing step in order to overcome the 35 U.S.C. 101 rejection.

Claims 2-10, 12-17, 19-21 which depend from claims 1, 11, 18, directly or indirectly also contain the same 35 USC 101 rejection.

### **Claim Rejections - 35 USC § 103**

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3, 11, 18-19, 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dietrich et al (US Patent No. 5,548,518) in view of Hall, III (US Patent No. 4,015,366).

As per claims 1-3, 11, 18-19, 22-23, Dietrich discloses an allocation method for generating a production schedule. In so doing, Dietrich discloses dividing a priority ranked release schedule into "N" separate release schedules, where "N" represents a number of divisions of the priority ranked release schedule, sorting the "N" separate release schedules in a priority order based on an original priority ordering of the priority ranked release schedule and allocating available component supply based on the priority in the "N" separate release schedules (col. 4, lines 39-49). Dietrich teaches all of the limitations above but fails to expressly disclose rationing of the available component supply in each of the "N" separate release schedules. Hall in the same field of endeavor, discloses the concept of rationing a supply based on priorities of resources (col. 48 line 66 through col. 49 line 6). Therefore, it would have been obvious to a person of ordinary skill in the art to modify the disclosures of Dietrich to include rationing of the supply as evidenced by Hall in order to restrict an amount available resource.

7. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dietrich 5,548,518) in view of Hall, III "Hall" (US Patent No. 4,015,366) and further in view of de Andrade, Jr. et al. "de Andrade" (US Patent No. 6,606,527).

As per claims 4-6, the combination of Dietrich and Hall does not explicitly disclose wherein the rationing of the available component supply is further based on business rules, and wherein the business rules matches assets with requirements such that the material releases of

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equal priority in each of the "N" separate release schedules are allocated in accordance with the available component supply in proportion to relative size subject to supply and capacity availability. de Andrade in the same field of endeavor, teaches the concept of using business rules for matching materials to be allocated in a plant (col. 6, lines 11-19; col. 10, lines 35-52). It would have been obvious to a person of ordinary skill in the art to modify the disclosures of Dietrich and Hall to incorporate the teachings of de Andrade in order to allocate equipment capacity to expected order in a multiple production line manufacturing plant.

#### **Allowable Subject Matter**

8. Claims 7-10, 12-17, and 20-21 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 101, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims

10. The following is a statement of reasons for the indication of allowable subject matter of claims 7-8:

Prior art of record fails to teach or suggest wherein: the sorting step further modifies the priority ranked release schedule such that priority of the material releases at a particular level in the "N" separate release schedules dynamically allocates and rations limited component supply and capacity among the material releases; and the allocation step further allocates finite component supply to the material releases in each of the "N" separate release schedules such that a quantity of each material release is constrained by an availability of the limited component supply, and wherein a remaining unscheduled portion of the material release are rescheduled in advance or at a later time period.



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9. The following is a statement of reasons for the indication of allowable subject matter of claim 9:

Prior art of record fails to teach or suggest wherein the allocation step further allocates finite capacity to the material releases in each of the "N" separate release schedules such that the material releases are limited to a size and number of possible releases according to limiting capacity resources, wherein the resources include assembly capacity.

10. The following is a statement of reasons for the indication of allowable subject matter of claims 10, and 21:

Prior art of record fails to teach or suggest considering global information for rationing of the available component supply in each of the "N" separate release schedules in order to determine an optimal delay for the scheduled material releases, wherein the global information includes (i) the priority ranked release schedule including a list of the material releases indexed by part number (PN), location, process type and time period, (ii) quantity of each component required per piece of finished assembly for each PN, (iii) supply of the each component being shipped between locations indexed by locations and time period, (iv) transit time to ship the each component between locations indexed by locations, (v) capacity available indexed by capacity type, location and time period, and (vi) capacity required of each capacity type for each type of material release indexed by location, process and time period.

11. The following is a statement of reasons for the indication of allowable subject matter of claim 12:

Prior art of record fails to teach or suggest wherein the scheduled release is subject to (i) capacity and component supply constraints not being violated, (ii) a maximum possible release at

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a next level given the capacity and component supply constraints and (iii) limited resources allocated to equal priority releases in proportion to size.

12. The following is a statement of reasons for the indication of allowable subject matter of claims 13 and 14

Prior art of record fails to teach or suggest allocating the assembly capacities and component supplies according to availability determined by user supplied input including transit/shipping times, capacity requirements and capacity availability from current locations, wherein the allocating step includes: attempting to first allocate component supply and capacity resources at a specified release date subject to constraints on the resources and component supplies, and rationing at least one of the resources and component supplies in proportion to release size if insufficient at least one of the resources and component supplies are available.

13. The following is a statement of reasons for the indication of allowable subject matter of claim 15.

Prior art of record fails to teach suggest the dividing step is applied at predetermined levels of the priority ranked scheduled release; the allocating step includes determining availability of the component supplies to determine availability first in a current period, next in earlier periods, and then in later periods, wherein the availability is computed based on current location and user supplied transit times between locations.

14. The following is a statement of reasons for the indication of allowable subject matter of claims 16-17.

Prior art of record fails to teach suggest wherein the component supplies with a least component supply availability is found in order to determine a maximum release of the product

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in a predetermined time period; scanning through all capacity types and time periods allocating the assembly capacities over time according to the capacity required and subject to availability until sufficient capacity is allocated according to the component supplies; and reducing a remaining release of the product left to a new schedule based on the capacity required and subject to component availability and wherein the scanning step includes the steps of: computing the capacity required for a maximum release for the given time period and the resource, computing the capacity available for the given time period and the resource, and scheduling the maximum release of product if the available capacity is greater than the required capacity.

15. The following is a statement of reasons for the indication of allowable subject matter of claim 20.

Prior art of record fails to teach or suggest wherein: the means for sorting further modifies the priority ranked release schedule such that priority of the material releases at a particular level in the "N" separate release schedules dynamically allocates and rations limited component supply and capacity among the material releases; and the means for allocating further allocates finite component supply to the material releases in each of the "N" separate release schedules such that a quantity of each material release is constrained by an availability of the limited component supply.

### **Conclusion**

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


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- a. Bradford (US Patent No. 6,941,514) discloses a system and method for priority-based work order scheduling.
- b. Mahapatro (US Patent No. 6,571,215) discloses a system and method for generating a schedule based on resource assignments.
- c. Ogawa (US Patent No. 5,914,878) discloses a raw material ordering system
- d. Larry (Supply Chain Optimization: Just the Facts), discloses a supply chain optimization system for rationing available supply.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Romain Jeanty whose telephone number is (571) 272-6732. The examiner can normally be reached on Mon-Thurs from 7:30 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq R. Hafiz can be reached on (571) 272-6729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**ROMAIN JEANTY**  
**PRIMARY EXAMINER**  
Art Unit 3623  
9/6/2005